AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in this application:

LISTING OF CLAIMS:

Claims 1 to 13. (Canceled).

14. (Previously Presented) A device for generating chlorine trifluoride comprising:

a plasma reactor (100);

plasma generating means (110, 120, 130, 150, 155, 160, 170, 180) via which a high-density plasma (105) can be generated in the interior of the plasma reactor (100);

a first gas;

a second gas selected to react with the first gas to form chlorine trifluoride when under the influence of a high-density plasma; and

gas supply means (21, 25, 22, 26) via which the first gas and the second gas can be supplied to the plasma reactor (100), these gases reacting with one another under the influence of the high-density plasma (105) in the plasma reactor (100), forming chlorine trifluoride, and a gas outlet (20) via which the formed chlorine trifluoride can be removed from the plasma reactor (100), the gas supply means including

a first mass flow regulator configured to regulate the first gas to a first flow rate to the plasma reactor, and

a second mass flow regulator configured to regulate the second gas to a second flow rate to the plasma reactor,

wherein the first flow regulator and the second flow regulator are configured to regulate the respective first and second flow rates to provide an ideal stochiometric conversion of the first gas and the second gas to chlorine trifluoride.

15. (Previously Presented) The device according to Claim 14, wherein the plasma generating means include a coil (110), an adaptation network (120), and a high-frequency generator (130).

16. (Previously Presented) The device according to Claim 14, wherein the plasma generating means include a microwave hollow conductor (150), tuning elements (155), a magnetron (170), a circulator (160), and a hollow conductor terminating element (180).

17. (Previously Presented) The device according to Claim 14, wherein the plasma reactor (100) includes a quartz tube or a hollow quartz body having a polished interior wall or a ceramic tube or a hollow ceramic body having a polished interior wall or being made of aluminum oxide.

18. (Previously Presented) The device according to Claim 14, wherein first mass flow regulator (22) is adjustable, and the second mass flow regulator (26) is adjustable.

19. (Previously Presented) A system for etching semiconductor substrates, comprising: the device (6) according to Claim 14, a process chamber (10), which is connected to the plasma reactor (100) via the gas outlet (20), being assigned to it, the semiconductor substrate (30) being situated in the process chamber (10) and being exposed to the gaseous chlorine trifluoride generated by the device (6) for generating chlorine trifluoride.

20. (Previously Presented) A method for generating chlorine trifluoride, comprising: generating a high-density plasma (105) in a plasma reactor (100), and supplying to the plasma reactor (100) a first gas and a second gas, which react with one another under the influence of the high-density plasma (105) in the plasma reactor (100), forming chlorine trifluoride, a ratio of the amount of the first gas and the amount of the second gas being selected to achieve an ideal stochiometric conversion to chlorine trifluoride.

21. (Previously Presented) The method according to Claim 20, wherein the high-density plasma (105) is generated using inductive high-frequency excitation or microwave excitation.

22. (Previously Presented) The method according to Claim 20, wherein a gas which includes Cl_2 or HCl is used as the first gas, and a gas which includes NF_3, F_2, SF_6 is used as the second gas.

23. (Previously Presented) The method according to Claim 20, wherein oxygen as an additional gas is supplied to the plasma reactor (100) or to a process chamber (10) downstream from the plasma reactor (100).

24. (Previously Presented) The method according to Claim 20, wherein the generated chlorine trifluoride is separated from hydrogen fluoride and other gas components, using a filter downstream from the plasma reactor (100).

25. (Previously Presented) The method according to Claim 20, wherein the first gas and the second gas are supplied to the plasma reactor (100) in such a way that fluoride atoms and chlorine atoms, in the form of radicals or reactive species, are present in the high-density plasma (105) at a 3:1 ratio.

26. (Previously Presented) The method according to Claim 20, wherein the high-density plasma (105) is generated having a density in radicals or reactive species of at least 10^{11} particles per cm^3, in particular at least 10^{12} particles per cm^3.

27. (Previously Presented) A method of generating chlorine trifluoride, comprising:

generating a high-density plasma in a plasma reactor;

supplying to the plasma reactor a first gas according to a first gas flow rate; and

supplying to the plasma reactor a second gas according to a second gas flow rate, wherein

the first gas and the second gas react with one another under the influence of the high-density plasma to form chlorine trifluoride in the plasma reactor, and

a ratio of the first gas flow to the second gas flow is selected to achieve an ideal stochiometric conversion to chlorine trifluoride.

28. (Previously Presented) The method of claim 27, further comprising:

supplying the chlorine trifluoride gas from the plasma reactor to a process chamber, wherein a gas flow of the chlorine trifluoride from the plasma reactor to the process chamber is greater than 100 sccm.

29. (Previously Presented) A method comprising:

generating a high-density plasma in a plasma reactor;

supplying to the plasma reactor a first gas; and

supplying to the plasma reactor a second gas;

reacting the first gas and the second gas under the influence of the high-density plasma to form chlorine trifluoride in the plasma reactor; and

transferring the formed chlorine trifluoride to a process chamber assigned to the plasma reactor;

etching a silicone substrate in the process chamber using the formed chlorine trifluoride as an etching gas.

30. (Previously Presented) The method of claim 29, wherein:

the first gas is supplied to the plasma reactor according to a first gas flow rate;

the second gas is supplied to the plasma reactor according to a second gas flow rate; and

a ratio of the first gas flow to the second gas flow is selected to achieve an ideal stochiometric conversion to chlorine trifluoride.

31. (Previously Presented) The method of claim 29, wherein a gas flow of the chlorine trifluoride from the plasma reactor to the process chamber is greater than 100 sccm.